CA2 ALA 3
1955P13

PUBLICATION No. 13 REPRINTED 1955

LEGISLATURE LIBRARY
EDMONTON

SWINE PARASITES

ALBERTA LEGISLATURE LIBRARY
3 3398 00408 7606

CAUSE LOSS OF $

Two pigs of the same age. The large one is normal; the small one was stunted by roundworms, mange mites and other hog-lot infections.

ALBERTA DEPARTMENT OF AGRICULTURE

Digitized by the Internet Archive
in 2019 with funding from
Legislative Assembly of Alberta - Alberta Legislature Library

GOVERNMENT OF THE PROVINCE OF ALBERTA

DEPARTMENT OF AGRICULTURE

SWINE PARASITES

Prepared by

DR. G. S. WILTON

PATHOLOGIST OF ANIMAL DISEASES

Veterinary Laboratory

Veterinary Services Branch

•

Distributed by

EXTENSION SERVICE

DEPARTMENT OF AGRICULTURE

•

Published by Direction of

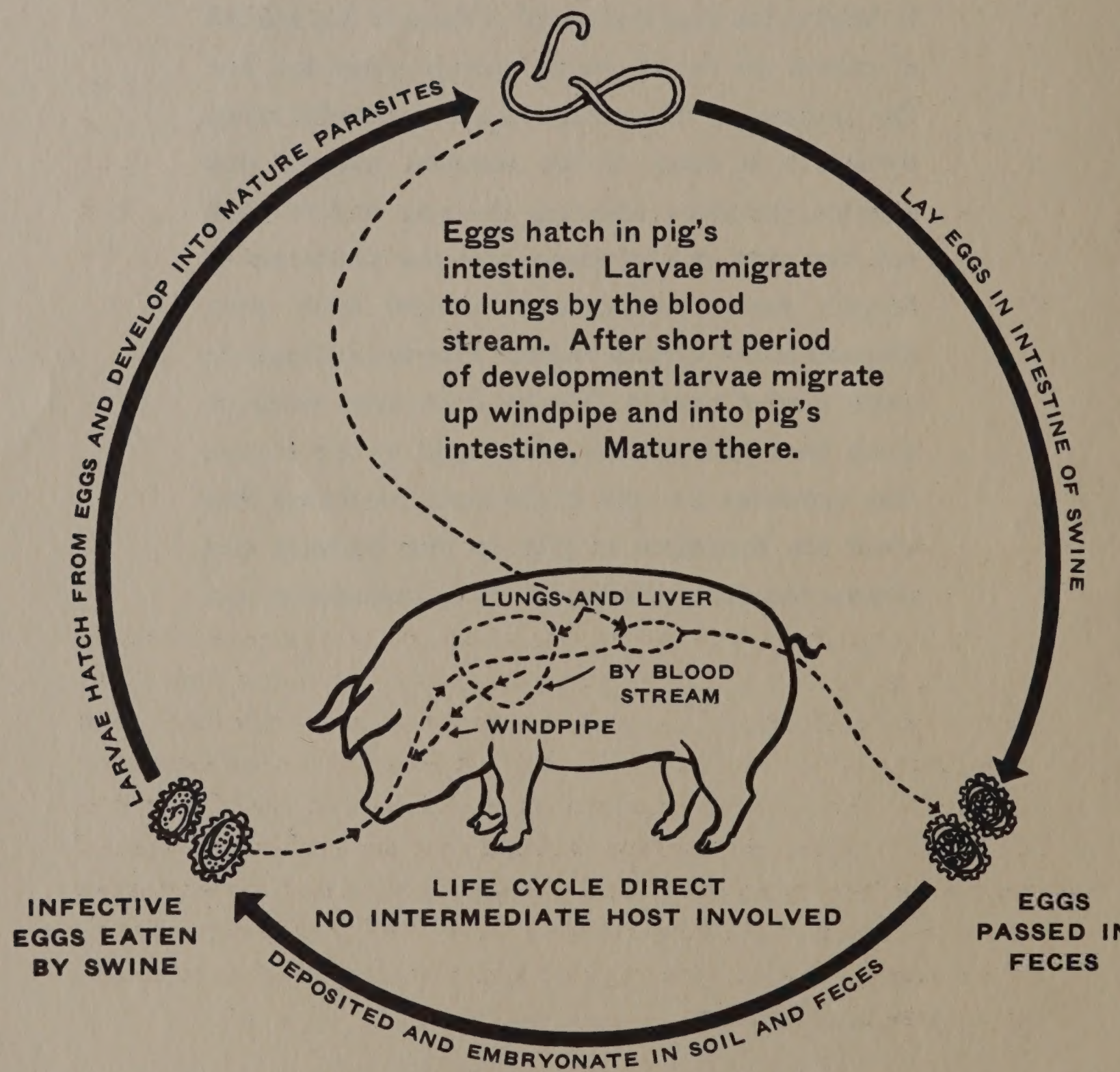
HON. L. C. HALMRAST

Minister of Agriculture

INTRODUCTION

Swine are potential host of many parasites. In Alberta the most important of these in this species of animal are round worms, mange mites and lice. The purpose of this pamphlet is to acquaint swine owners with some of the common internal and external parasites affecting the hog and to point out that any one of these cost the producers of Alberta many thousands of dollars each year. Affected swine (unless treated) take much longer to reach market weight, thereby consuming twice as much feed and reducing the profit to the owner. Also parasites are one of the main conditions that lower the resistance of pigs so that bacteria and viruses can cause diseases such as pneumonia, etc.

LIFE HISTORY
OF A
ROUNDWORM OF SWINE
ASCARIS LUMBRICOIDES
ADULT PARASITE IN SMALL INTESTINE OF SWINE


LAY EGGS IN INTESTINE OF SWINE
EGGS PASSED IN FECES
DEPOSITED AND EMBRYONATE IN SOIL AND FECES
INFECTIVE EGGS EATEN BY SWINE
LARVAE HATCH FROM EGGS AND DEVELOP INTO MATURE PARASITES
Eggs hatch in pig's intestine. Larvae migrate to lungs by the blood stream. After short period of development larvae migrate up windpipe and into pig's intestine. Mature there.
LUNGS AND LIVER
BY BLOOD STREAM
WINDPIPE
LIFE CYCLE DIRECT
NO INTERMEDIATE HOST INVOLVED

ROUND WORMS

The round worm, usually pinkish in color, may reach a length of twelve inches. The female may contain as many as 27,000,000 eggs and she may give off as many as 250,000 eggs a day. The eggs of the parasite are passed off with the manure and if conditions are favourable may remain alive in the soil and infect pigs even up to a period of four years later. The eggs, if swallowed, hatch in the small intestine of the pig. The young larvae penetrate the wall of the intestine and aided by the circulation, pass to the liver, eventually reaching the lungs. (Consult above diagram). In the lung the larvae develop 5 to 10 times their original size, break out of the small blood vessels, migrate up the air passages to the throat, are swallowed and upon reaching the small intestine develop into the adult worm. From the time the eggs are swallowed it takes about two and one-half months for this migration through the body and development to the adult stage.

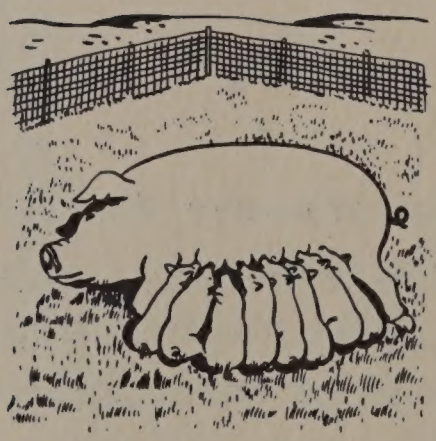
SYMPTOMS

The migrating immature worms often cause extensive damage to the lungs, resulting in pneumonia and cough in young pigs. This is common in Alberta. The adult worms living in the intestinal tract cause damage to the intestinal wall resulting in an inflammation (enteritis). The affected pigs are often stunted and unthifty with a rough coat. Although healthy, well-fed pigs sometimes are infested without showing symptoms, it must be kept in mind that the worms are a constant threat and predispose the animal to other diseases. Worms do the worst damage to young pigs and are not usually so serious after the pig weighs 125 pounds.

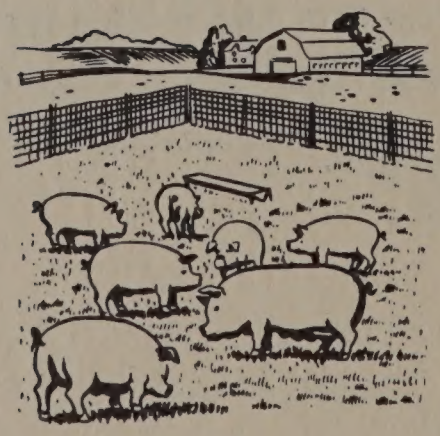
PREVENTION

1. Clean all farrowing pens and scrub them with 1 pound of lye to 30 gallons of boiling water. Then spray them with 1 pint of compound cresol solution to 4 gallons of water or according to manufacture's directions. The hot water kills the worm eggs, the lye loosens the dirt and the disinfectant destroys germs of infectious diseases.

2. Wash the sow's sides and udder with soap and water before putting her in the clean farrowing pen. This removes worm eggs from the sow so that the little pigs cannot become infested when they nurse.



3. About ten days after farrowing place the sow and her litter in a pasture of alfalfa or other good mixture where no hogs have run for at least a year. Preferably this pasture should be a field which has been cultivated since last used by hogs. This also helps reduce the danger from rhinitis and other infectious diseases.



4. At weaning time remove the sow and leave the pigs in this pasture until it is time to put them into the fattening pens.

5. Good sanitation and yearly pasture rotation helps to prevent worms in swine.

TREATMENT

There are several methods.

1. **SODIUM FLUORIDE** is a **highly effective** preparation for removing round worms in swine. The recommended amount is one pound of Sodium Fluoride to 99 pounds of ground feed (1%) (¼ pound to 25 pounds of feed, or ½ pound to 50 pounds of grain). **Mix the Sodium Fluoride and feed thoroughly.** The pigs to be treated are slightly underfed the day before treatment. On the day of the treatment the medicated feed is given in the morning in such amounts as the animals normally consume in one day. **It must be fed dry.** The pigs may be given water a few hours after the feed is all eaten or in the evening when the uneaten feed that is left is removed. Hogs not accustomed to dry feeding should be put on a dry feed for 3 or 4 days prior to treatment. Separate the hogs, according to size and weight, into groups of not more than 20 to 30. A 40- to 50-pound shoat will consume 2 to 2½ pounds of feed per day. **Only a one-day treatment is necessary.** Hogs in old lots should be treated 3 times at 30- to 45-day intervals.

CAUTION!

Sodium Fluoride is very **poisonous** if not used properly. Cases of poisoning have been diagnosed at the Alberta Veterinary Laboratory where more than the amount recommended was fed to the pigs and when not used properly. Feed mixtures must be kept away from all other types of livestock. Containers of Sodium Fluoride should be conspicuously labelled and stored out of reach of children, household pets and other domestic livestock.

2. **PHENOTHIAZINE** — The pigs of the same size are fenced in groups of 4 or 5. The meal before treatment should be omitted. The phenothiazine is mixed in with a grain slop at the rate of one tablespoonful per one hundred pounds body weight. Pigs must be confined in their pens out of sunlight for 4 or 5 days after treatment. Sunlight will cause blistering.

HOG LICE

Hog lice are parasitic on swine only, spending their entire life on the pig. When separated from an animal, hog lice live only 2 or 3 days. Lice are quite large and can be seen when an animal is infested. They are blood suckers and cause a discomfort so that affected pigs do not eat well. Practically all new infestations occur when sexually mature female lice leave the tips of the bristles of a hog and attach themselves to the hair of other hogs.

CONTROL AND TREATMENT

1. **ROTENONE** — Mix 2½ pounds of derris powder (which must contain 5 per cent actual rotenone) to 100 gallons of water.

2. **D.D.T.** — Mix 4 pounds of 50 per cent D.D.T. **wettable** powder into 100 gallons of water, or use 2 level tablespoonfuls of 50 per cent powder to every gallon of water.

METHODS FOR 1 and 2

D.D.T. or rotenone will give better results than the old oiling method of control. Rotenone and D.D.T. are both applied as sprays or dips. An oil drum with the top cut out makes a good dipping vat for treating small pigs, but regular hog vats are needed for heavier animals. Few vats are available so spraying is the most practical method of treating. The hogs' hair is thin and high nozzle pressures are not needed. Although the power sprayer does the job quicker, compressed air garden sprayers will give good results.

Treat all hogs on the farm, thoroughly wetting each one. They can be sprayed in a crowded pen. They should be sprayed at least twice at a 14-day interval since there is nothing that can be relied upon to kill both lice and louse eggs.

3. On most farms where only a few hogs are kept the lice can be controlled satisfactorily by pouring used crank case oil along the animal's back with lots behind the ears. A rubbing post made by fastening a burlap bag around a post and keeping it soaked in oil is also good.

MANGE

Two varieties of mange mites attack swine but only the Sarcoptes scabiei suis form is common in Alberta and it cost the swine producer huge sums of money each year through stunting the animal's growth. It is observed mostly in pigs kept under unsanitary and crowded conditions.

SYMPTOMS

The parasites pierce the skin which causes intense itching and scratching. The first lesions usually appear on the head of the hog around the eyes, nose or ears where the skin is tender and the hair is thin. From there the condition spreads over the neck, shoulders back and sides and may involve the entire body. The lesions first appear as a reddened area but become thickened, wrinkled and darkened. The injury from rubbing and other efforts to relieve the intence itching causes large scabs. If the condition is neglected the pigs become unthrifty and stunted. It spreads most rapidly under close confinement.

DIAGNOSIS

Your veterinarian can diagnose this disease early by a microscopic examination of deep scrapings from recent lesions.

TREATMENT

Hogs may be sprayed or dipped with medicated liquids known to kill the parasite.

1. **LINDANE** — A new product containing benzene hexachloride, is very efficient. If sprayed it is necessary to completely cover the animals. On small numbers of hogs compressed air garden sprayers or bucket pumps give good results but power sprayers will get the job done quicker on larger lots. The number of applications will depend on the degree of infestation. A brush can also be used. The pig should be scrubbed clean first with soap and water to remove the scabs so the Lindane can get at the mites underneath.

Thoroughly clean and disinfect the hog pens and hog houses. Remove old straw stacks when used as hog pens, especially when damp. If straw stack houses are used see that they are placed on high ground so they will stay dry. Do not use them on that ground for any longer than one year as such quarters are bad for parasitic infestation. Old, damp straw butts are also breeding grounds for an outbreak of necrotic enteritis and other infectious diseases. Muddy, dirty water holes are bad.

NOTE :—All parasitic infestations should be treated at least twice.

THE McLEAN COUNTY SYSTEM OF SWINE SANITATION

This system, developed in McLean County, Illinois, has been widely used to control round worms in swine in United States and Canada. It also helps to reduce the danger of other infectious diseases. It is based on the following points:

(1) Young pigs are very susceptible to worm infestations and suffer most during the first few weeks of their lives.

(2) They become infected by swallowing the infective eggs of the parasite from ground contaminated by infected hogs.

(3) The adult female worm in the intestine of the pig may give off as many as 250,000 eggs a day. A hog is likely to swallow large numbers of eggs on infected premises.

(4) The eggs may adhere to the sides of the pig as well as to the floors of buildings.

PROCEDURE

The McLean County system of swine sanitation represents the ideal or perfect method of controlling parasites. It is fully realized that it may not be practical on many farms but an owner would be well advised to adhere as closely as possible to the recommended procedures. It is known that in order to protect young pigs from infection it is necessary to establish protective measures even before they are born. They should be kept away from old hog lots or pastures from birth until they are several months of age.

(1) Before the sow farrows the farrowing pen should be thoroughly cleaned, removing all manure and bedding. The floors, walls, partitions and guard rails should be soaked and scraped until they are absolutely clean. Then the entire pen as well as the troughs should be washed and scrubbed, using a stiff broom with liberal quantities of very hot water in which lye has been dissolved. If possible, boiling water should be used, for the hotter the water the more effective it will be in destroying the worm eggs. The lye acts as a cleaning agent and helps to remove the dirt in which worm eggs are apt to be lodged. Particular attention should be given to the cracks and crevices in the

floors, walls, troughs, guard rails and any other places within reach of pigs where parasite eggs may be present. Following thorough scrubbing with the lye solution the pen should be rinsed down with clean water and no one should re-enter the pen. The final rinsing should be done from the outside. If there are outside pens of wood or concrete construction in connection with inside pens, then they should also be cleaned; if they have dirt floors they should be shut off and not used.

(2) A few days before the sow is due to farrow she should be washed with soap and water to remove the dirt and worm eggs that adhere to her skin. Particular attention should be given to the sides and udder where the little pigs come in close contact with their mother. Immediately after being washed the sow should be placed in the freshly cleaned farrowing pen. After farrowing the sow and pigs should not be allowed out of the farrowing pen until they are taken to pasture. Care should be taken by the attendants not to introduce worm eggs into the pens by dirty shoes or dirty troughs, etc.

(3) Haul the sow and the pigs to the clean pasture rather than drive them. If precautions are not taken during this trip the pigs are apt to pick up the parasite eggs enroute from the farrowing pen to the pasture.

(4) Leave the young pigs in the clean pasture until they are at least four months of age. The pasture provided for the sow and her litter should not be a permanent pasture that was used by hogs the year before and contaminated with worm eggs and larvae, but rather it should be a field that has been under cultivation and sown to a suitable forage crop. Alfalfa pastures are good and yearly pasture rotation is highly recommended.

NOTE –In the case of winter litters, some modification must be made but the same thorough cleaning should be carried out. The sow should have her cleaned farrowing pen and be washed and scrubbed before going into it. Each sow and her litter should be either moved to a banked portable colony house that has been thoroughly cleaned or the pigs should be placed in a well constructed piggery with preferably concrete floors which can be washed and scrubbed with a hot-water-lye solution before every new lot of pigs.

Remember

1 Get a correct diagnosis early so you don't waste money on the wrong preventative measures or treatment. Consult your veterinarian before the condition is widespread.

2 Strict sanitation helps reduce the loss in dollars from parasites and disease infections.

3 Raising pigs on a good pasture is profitable by controlling parasites, diseases and reducing the cost of feeding. Pastures should be rotated yearly.

Treatments — (Consult text of bulletin)—

4 (a) Round worms — sodium fluoride, etc.

(b) Lice — crank-case oil, etc.

(c) Mange — Lindane.

5 Old, damp straw butts, muddy water holes, dirty pens, overcrowding, etc., are bad.

6 Proper care of the pregnant sow will give you healthier, stronger little pigs.

7 Treating is one part of the job. The other part is to kill the parasites in the pens, etc.

OTHER PUBLICATIONS

on diseases and parasites of livestock
available from

DISTRICT AGRICULTURISTS

or

DEPARTMENT OF AGRICULTURE
Edmonton, Alberta

Publication No.	Name
84	Bang's Disease
112	Bloat in Cattle and Sheep
14	Diseases of Suckling Pigs
12	Infectious Rhinitis
26	Mastitis — Prevention and Control
89	Rabies
88	Shipping Fever of Cattle
115	Sodium Fluoride for Treatment of Worms in Swine
116	Swine Erysipelas

EDMONTON : Printed by A. SHNITKA,
Queen's Printer for Alberta, 1955

5M-B-55.